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I, the below named translator, hereby declare that:

My name and post office address are as stated below;

That I am knowledgeable in the Japanese language in which the below identified Japanese application was filed, and that I believe the English translation of the Japanese application No. 10208/2001 is a true and complete translation of the above identified Japanese application as filed.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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(Translation)

PATENT OFFICE
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This is to certify that the annexed is a true copy of the following application as filed with this Office.

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[Name] Drawing 1

[Name] Abstract 1

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(Translation)

[Name of Document] SPECIFICATION

[Title of Invention] WIRELESS TELEPHONE DEVICE AND CALL RECEIVING PROGRAM

[Claim for Patent]

[Claim 1] A wireless telephone device comprising detecting means for detecting and identifying a caller number and display means for displaying various information including a calendar and a telephone number, said wireless telephone device comprising:

memory means for storing registered caller numbers, a predetermined call receiving time period or periods corresponding to each of said registered caller numbers, and a display message corresponding to each of said registered caller numbers and each of said predetermined call receiving time periods;

timer means; and

controlling means for determining, upon receiving a call with a caller number, whether or not any one of said registered caller numbers stored in said memory means is identical with said caller number and, in case where presence of the identical one is determined, activating said timer means, monitoring a counted time period by said timer means, determining whether or not the call ends within a predetermined call receiving time period which is stored in said memory means and which corresponds to said caller number, and making said display means display, in case where it is determined that the call ends within said predetermined call receiving time period, the registered call number and a display message which is stored in said memory means and which is associated with said predetermined call receiving time period.

[Claim 2] The wireless telephone as claimed in claim 1, wherein said display means is a color LCD.

[Claim 3] The wireless telephone device as claimed in claim 1 or 2, comprising means for setting and modifying each of said registered caller numbers, said predetermined call receiving time period or periods corresponding to each of said registered caller numbers, and said display message corresponding to each of said registered caller numbers and each of said predetermined call receiving time periods.

[Claim 4] The wireless telephone device as claimed in claim 1 or 2, wherein each of said registered caller numbers, said predetermined call receiving time period or periods corresponding to each of said registered caller numbers, and said display message corresponding to each of said registered caller numbers and each of said predetermined call receiving time periods are set through an external device.

[Claim 5] The wireless telephone device as claimed in any one of claims 1 through 4, wherein said controlling means prohibits transition to a call answering operation during a call receiving operation within said predetermined call receiving time period.

[Claim 6] A call receiving program in a wireless telephone device comprising detecting means for detecting and identifying a caller number and display means for displaying various information including a calendar and a telephone number, said call receiving program including:

a step of determining, upon receiving a call with a caller number, whether or not one identical with said caller number is stored in memory means storing registered caller numbers, a predetermined call receiving time period or periods corresponding to each of said registered caller numbers, and a message corresponding to each of said registered caller numbers and each of said predetermined call receiving time periods;

a step of activating timer means and monitoring a counted time period by said timer means in case where the caller number is stored;

a step of determining whether or not the call ends within a predetermined call receiving time period which is stored in said memory means and which corresponds to said caller number;

a step of making said display means display, in case where it is determined that the call ends within said predetermined call receiving time period, a message which is stored in said memory means and which is associated with said predetermined call receiving time period; and

a step of making said display means display said caller number and performing a normal call receiving operation in case where said caller number is not stored in said memory means.

[Claim 7] The call receiving program as claimed in claim 6, further comprising:

a step of prohibiting transition to a call answering operation during monitoring the counted time period by said timer means; and

a step of canceling the prohibition of transition to the call answering operation in case where it is determined that the call ends over said predetermined call receiving time period.

[Detailed Description of the Invention]

[0001]

[Technical Field of the Invention]

This invention relates to a wireless telephone device having means for detecting and identifying a caller number and capable of displaying a calendar, a telephone number, and so on.

[0002]

[Prior Art]

In recent years, wireless telephone devices such as PHS and cellular telephones remarkably become widespread.

[0003]

[Problem to be Solved by the Invention]

In a wireless telephone, for the purpose of sending a very simple message, for example, a message such as "come back home early" to a wireless telephone user, a caller must talk on the phone to verbally convey the message. This causes unwilling but inevitable payment of expensive phone charges because of a call to the wireless telephone device.

[0004]

It is an object of the present invention to provide a wireless telephone device capable of receiving a message from an arbitrarily-set caller without answering a call.

[0005]

[Means to Solve the Problem]

Desired caller numbers, a predetermined call receiving time period or periods corresponding to each of the caller numbers, and a display message corresponding to each of the caller numbers and each of the predetermined call receiving time periods are stored in a message memory portion.

[0006]

When a call with a caller number is received, it is determined whether or not the caller number is identical with any one of the caller numbers stored in the message memory portion. In case where it is determined that no identical caller number is stored, the caller number is displayed on a display portion and a call receiving operation is executed as a normal process. In case where it is determined that the identical caller number is stored, the caller number is displayed on the display portion, the call receiving operation is executed, and a timer for measuring a call receiving operation time period is activated. The timer is monitored and, in case where it is determined that the call is cut off within the call receiving time period stored in the message memory portion, the display portion displays a message which is stored in the message memory

portion and which corresponds to the call receiving time period and the caller number. In case where the call is continued over the call receiving time period, a normal call receiving operation is continuously carried out.

[0007]

It is noted here that, during the call receiving operation within the predetermined call receiving time period, the call receiving operation is maintained and, even though a user tries to execute transition to a call answering operation, a process of prohibiting transition to the call answering operation is performed.

[0008]

By ending a call within a predetermined call receiving time period, an owner of a caller number which is arbitrarily set by a wireless telephone user can send a desired message corresponding to the caller number and the predetermined call receiving time period to the wireless telephone user. Therefore, it is possible to receive the desired message from the owner of the caller number which is arbitrarily set, without payment of phone charges.

[0009]

It is necessary for the wireless telephone user to preliminarily notify the owner of the caller number stored in the message memory portion of the call receiving time period and the content of the message.

[0010]

[Mode of Embodying the Invention]

Next, an embodiment of the present invention will be described with reference to the drawing.

[0011]

Referring to Fig. 1, a wireless telephone device according to one embodiment of the present invention comprises an antenna 1, a radio receiving portion 2, a demodulating portion 3, an operating portion 4, a memory portion 5,

a message memory portion 6, a caller number comparing portion 7, a timer 8, a call receiving time period determining portion 9, a sound input/output portion 10, a sounder 11, a vibrator 12, a display portion 13, and a controlling portion 14.

[0012]

The radio receiving portion 2 receives radio signals which are received through the antenna 1. The demodulating portion 3 demodulates the radio signals. The operating portion 4 is used by a user to perform retrieval of a telephone number, permission of answering a call, ending of communication, switching of a display, input to a telephone directory memory, setting/modifying of telephone numbers and messages, and so on. The memory portion 5 stores the telephone directory memory, processing programs, and so on. The message memory portion 6 stores one or more caller numbers which are input through the operating portion 4 by a user, and a call receiving time period and a display message both of which correspond to each of the caller numbers. Upon acknowledgement of a call with a caller number, the caller number comparing portion 7 determines whether or not any one of the telephone numbers stored in the message memory portion 6 is identical with the caller number. In case where the caller number is contained in the telephone numbers stored in the message memory portion 6, the timer 8 is activated by the controlling portion 14 and measures a call receiving time period. The call receiving time period determining portion 9 compares the messages stored in the message memory portion 6 and the time period measured by the timer 8. The sound input/output portion 10 includes a receiver, a microphone, and so on and performs input/output of speech sound. The sounder 11 generates a monotonous sound and so on. The vibrator 12 generates vibration. The display portion 13 comprises a color LCD and displays information such as a caller number and a current date. The controlling portion 14 controls the above-mentioned portions 3 through 13.

[0013]

Table 1 shows one example of a memory pattern of the message memory portion 6 in the embodiment.

[0014]

[Table 1]

registered caller numbers	predetermined call receiving time periods	display messages
--***1	1 - 3 seconds	Call back
	3 - 5 seconds	Come back home early
--***2	1 - 4 seconds	Come back to the office
--***3	1 - 3 seconds	Come back to your desk

[0015]

The message memory portion 6 stores, as registered caller numbers, three caller numbers, i.e., ***-***-***1, ***-***-***2, and ***-***-***3. For the registered caller number ***-***-***1, the above-mentioned two predetermined values "1 - 3 seconds" and "3 - 5 seconds" are stored as predetermined call receiving time periods. As display messages associated therewith, "Call back" and "Come back home early" are stored, respectively. Similarly, for the registered caller number ***-***-***2, "1 - 4 seconds" is stored as a predetermined call receiving time period and "Come back to the office" is stored as a display message associated therewith. For the registered caller number ***-***-***3, "1 - 3 seconds" is stored as a predetermined call receiving time period and "Come back to your desk" is stored as a display message associated therewith.

[0016]

Next, an operation of the embodiment will be described.

[0017]

In the wireless telephone device, the antenna 1 receives radio signals from public network base stations or household base phones and transmits the signal to the radio receiving portion 2. The demodulating portion 3 demodulates the signals supplied from the radio receiving portion 2. The demodulating portion 3 produces output signals as sound signals or control signals which are supplied to the controlling portion 14. Among the signals, the sound signals are subjected to sound processing by the controlling portion 14 and transmitted to the sound input/output portion 10 as speech sound. The control signals are used in processing inside the controlling portion 14.

[0018]

Next, referring to Fig. 1 and a flow chart shown in Fig. 2, a call receiving operation in the embodiment will be described in detail.

[0019]

When a call with a caller number is acknowledged at a step 101, the caller number comparing portion 7 determines at a step 102 whether or not the acknowledged caller number N1 is identical with one of registered caller numbers stored in the message memory portion 6. If the number is determined identical, the controlling portion 14 activates the timer 8 at a step 103, reads at a step 104 a predetermined call receiving time period T1 which is stored in the message memory portion 6 and which is associated with the caller number N1, and writes the predetermined call receiving time period T1 into the call receiving time period determining portion 9 at a step 105. The controlling portion 14 makes the display portion 13 display the caller number N1 at a step 106 and activates the sounder 11. By the call receiving time period determining portion 9, the controlling portion 14 executes a call receiving operation with prohibition of a call answering processing at a step 107. Thereafter, the call receiving time period determining portion 9 determines at a step 108 whether or not the call receiving time period is within the above-mentioned predetermined value T1. If

it is determined that the call receiving time period is within the above-mentioned predetermined value T1, the call receiving operation with prohibition of the call answering processing is maintained. If it is determined in the determination at the step 108 that the call receiving time period is not within the above-mentioned predetermined value T1, the call receiving time period determining portion 9 cancels at a step 109 the call receiving operation with prohibition of the call answering processing and a normal call receiving operation is performed at a step 110. If the number is not determined identical in the determination at the step 102, the controlling portion 14 makes the display portion 13 display the caller number N1 at a step 111 and the normal call receiving operation is performed at a step 112.

[0020]

Next, referring to Fig. 1 and a flow chart shown in Fig. 3, a call receiving time period determining operation in the embodiment will be described. Herein, as one example, description will be made about a case where, for the registered caller number N1 which is stored in the message memory portion 6 and which is contained in the acknowledged call, the message memory portion 6 stores two predetermined values T1 and T2 (predetermined value T1 < predetermined value T2) as predetermined call receiving time periods and two messages M1 and M2 as display messages associated with the respective predetermined values.

[0021]

The controlling portion 14 sets the predetermined call receiving time periods T1 and T2 to the call receiving time period determining portion 9 at a step 201. Then, the call receiving time period determining portion 9 determines whether or not the call ends within the predetermined value T1 by a counted value of the timer 8. If it is determined that the call ends, the controlling portion 14 reads at a step 206 the message M1 which is stored in the message memory

portion 6 and which is associated with the predetermined value T1, performs call ending processing at a step 207, and makes the display portion 13 display the caller number N1 and the message M1 at a step 208. If it is determined in the determination at a step 202 that the call does not end, the call receiving time period determining portion 9 determines at a step 203 whether or not the call ends within the predetermined value T2 by the counted value of the timer 8. If it is determined that the call ends, the controlling portion 14 reads at a step 209 the message M2 which is stored in the message memory portion 6 and which is associated with the predetermined value T2 . The controlling portion 14 performs the call ending processing at a step 210. The controlling portion 14 makes the display portion 13 display the caller number N1 and the message M2 at a step 211. If it is determined that the call does not end in the determination at a step 204, the controlling portion 14 cancels at the step 204 the call receiving operation with prohibition of the call answering processing and a normal call receiving operation is performed at a step 205.

[0022]

As other embodiments of the present invention, the following may be envisaged.

1. The present embodiment has a structure in which the arbitrarily settable registered caller numbers, one or more predetermined call receiving time periods corresponding to each of the registered caller numbers, and the display message corresponding to each of the registered caller numbers and each of the predetermined call receiving time periods are stored in the message memory portion 6. However, the message memory portion 6 may be any memory means if it is readable by the controlling portion 14, the caller number comparing portion 7, and the call receiving time period determining portion 9.

2. The present embodiment has a structure in which the arbitrarily settable registered caller numbers, one or more predetermined call receiving time

periods corresponding to each of the registered caller numbers, and the display message corresponding to each of the registered caller numbers and each of the predetermined call receiving time periods are set by the wireless telephone device itself. However, it is possible to adopt another structure in which an external device is connected to set those values and numbers.

3. In the present embodiment, the message memory portion 6 can store three registered caller numbers. However, the number of registered caller numbers has no limit.

4. In the structure of the present embodiment, in case where a call matching one of the registered caller numbers stored in the message memory portion 6 is received, the call receiving time period determining portion 9 executes the call receiving operation with prohibition of the call answering processing until the counted value by the timer 8 exceeds the predetermined call receiving time period. However, it is possible to adopt a structure in which a normal call receiving operation without prohibition of the call answering processing is performed.

5. The caller number comparing portion 7 and the call receiving time period determining portion 9 may be included in the controlling portion 14 and the processing of the controlling portion 14 may be stored in a recording medium such as a floppy disc, a CD-ROM, a magnetooptical disc, and a DVD and executed by a data processing equipment such as a CPU.

6. The present embodiment has a structure in which the message memory portion 6 stores the registered caller numbers, one or more predetermined call receiving time periods corresponding to each of the registrant numbers, and the display message corresponding to each of the registrant numbers and each of the predetermined call receiving time periods. However, together with the caller number, a caller's name may be stored and, upon displaying the display message and the registered caller number, the caller's name may be displayed

together.

7. The present embodiment presents two kinds of notifying means, i.e., the sounder 11 and the vibrator 12. However, there is no restriction on the number and the kind of notifying means.

[0023]

[Effect of the Invention]

As described in the foregoing, according to the present invention, a caller who is arbitrarily set by a wireless telephone user can convey, by ending a call within a range of the predetermined call receiving time period, a desired message corresponding to the caller number and the call time period to the wireless telephone user. Therefore, this invention has an effect that the wireless telephone user can receive the desired message from the arbitrarily-set caller without payment of phone charges. Further, the wireless telephone user can receive the desired message without answering the call, so that call answering processing is reduced. Thus, there is another effect that battery life can be improved by reduction in current consumption.

[Brief Description of the Drawing]

[Fig. 1]

A block diagram of a wireless telephone device according to one embodiment of the present invention.

[Fig. 2]

A flow chart showing a process of a call receiving operation.

[Fig. 3]

A flow chart showing determination of a call receiving time period.

[Description of Reference Numerals]

1 antenna

2 radio receiving portion

3 demodulating portion

4 operating portion

5 memory portion

6 message memory portion

7 caller number comparing portion

8 timer

9 call receiving time period determining portion

10 sound input/output portion

11 sounder

12 vibrator

13 display portion

14 controlling portion

[Name of Document] ABSTRACT

[Abstract]

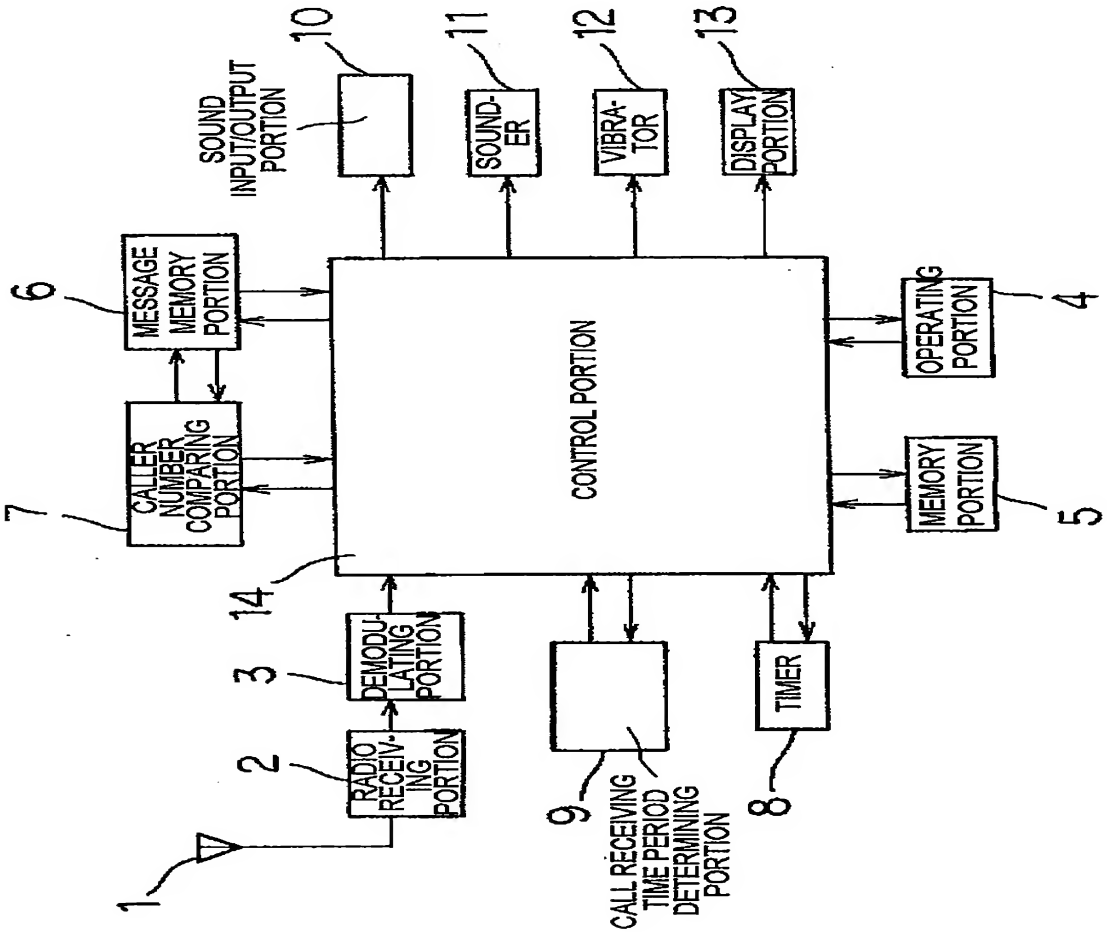
[Object] To provide a wireless telephone device capable of receiving a message from a caller who is arbitrarily set without answering a call.

[Solution] When a call with a caller number is received, a caller number comparing portion 7 determines whether or not a caller number identical with the caller number is stored in a message memory portion 6. In case where no identical caller number is stored, a display portion 13 displays the caller number and a call receiving operation is executed. In case where the identical caller number is stored, the display portion 13 displays the caller number, the call receiving operation is executed, and a timer 8 is activated. The timer 8 is monitored and, in case where the call is cut off within a call receiving time period stored in the message memory portion 6, the display portion 13 displays a message which is stored in the message memory portion 6 and which corresponds to the call receiving time period.

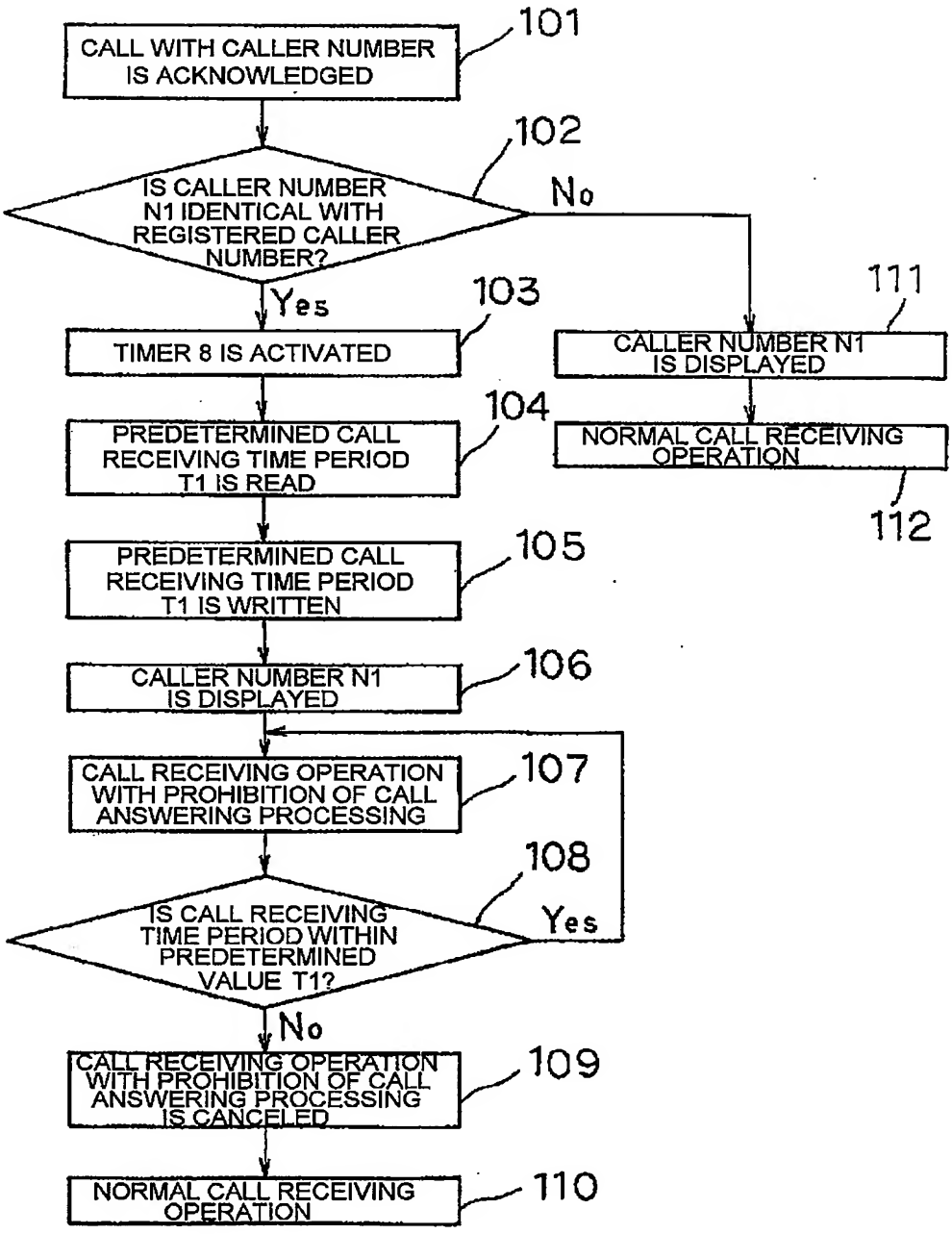
[Selected Figure] Fig. 1

[Name of Document] DRAWING

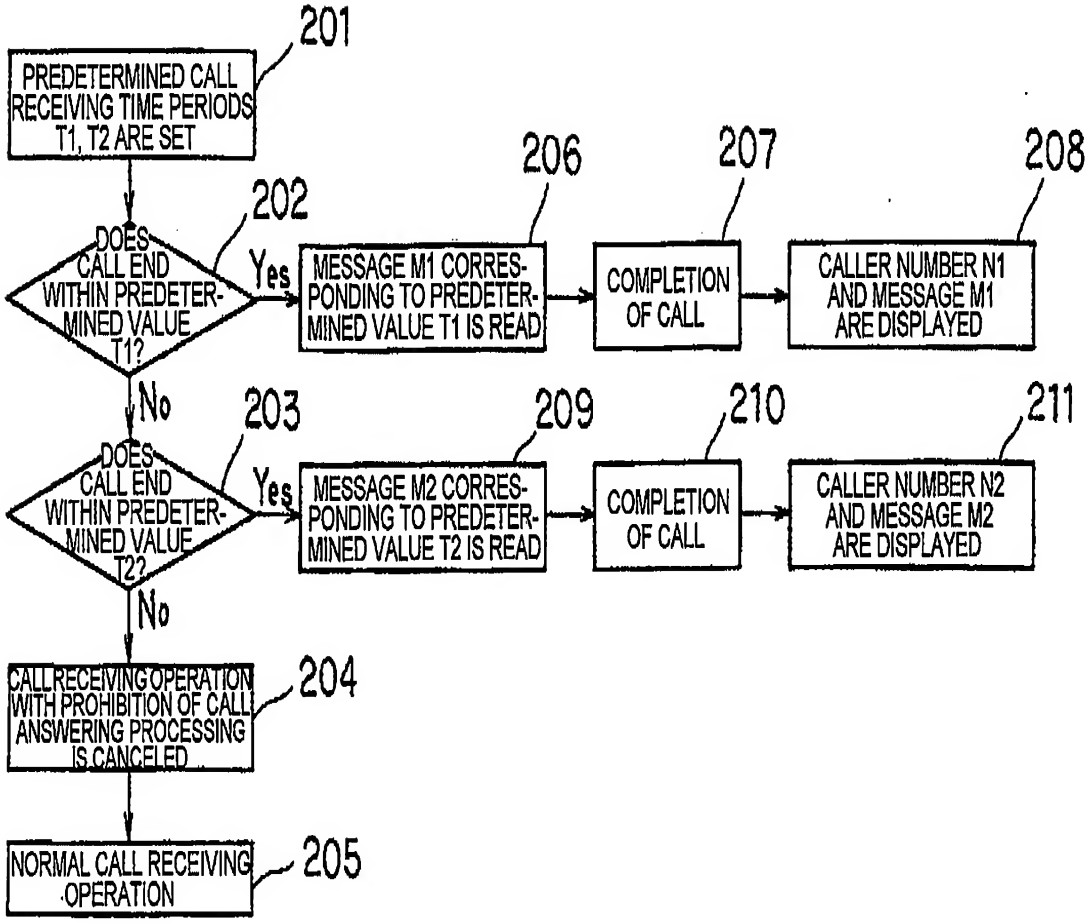
[Fig. 1]



[Fig. 2]


CALL WITH CALLER NUMBER IS ACKNOWLEDGED
101
IS CALLER NUMBER N1 IDENTICAL WITH REGISTERED CALLER NUMBER?
102
No
Yes
TIMER 8 IS ACTIVATED
103
CALLER NUMBER N1 IS DISPLAYED
111
PREDETERMINED CALL RECEIVING TIME PERIOD T1 IS READ
104
NORMAL CALL RECEIVING OPERATION
112
PREDETERMINED CALL RECEIVING TIME PERIOD T1 IS WRITTEN
105
CALLER NUMBER N1 IS DISPLAYED
106
CALL RECEIVING OPERATION WITH PROHIBITION OF CALL ANSWERING PROCESSING
107
IS CALL RECEIVING TIME PERIOD WITHIN PREDETERMINED VALUE T1?
108
Yes
No
CALL RECEIVING OPERATION WITH PROHIBITION OF CALL ANSWERING PROCESSING IS CANCELED
109
NORMAL CALL RECEIVING OPERATION
110

[Fig. 31]


201
PREDETERMINED CALL RECEIVING TIME PERIODS T1, T2 ARE SET
202
DOES CALL END WITHIN PREDETERMINED VALUE T1?
Yes
206
MESSAGE M1 CORRESPONDING TO PREDETERMINED VALUE T1 IS READ
207
COMPLETION OF CALL
208
CALLER NUMBER N1 AND MESSAGE M1 ARE DISPLAYED
No
203
DOES CALL END WITHIN PREDETERMINED VALUE T2?
Yes
209
MESSAGE M2 CORRESPONDING TO PREDETERMINED VALUE T2 IS READ
210
COMPLETION OF CALL
211
CALLER NUMBER N2 AND MESSAGE M2 ARE DISPLAYED
No
204
CALL RECEIVING OPERATION WITH PROHIBITION OF CALL ANSWERING PROCESSING IS CANCELED
205
NORMAL CALL RECEIVING OPERATION